LANDS AND FORESTS
TECHNICAL NOTE

OCCURRENCE OF THE RACCOON ROUNDWORM (*Baylisascaris procyonis*) IN RACCOONS IN NOVA SCOTIA

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INTRODUCTION

The raccoon roundworm (*Baylisascaris procyonis*) has been identified as a potential health hazard for humans and a number of different wild and domestic animals (Kazacos, 1983). The deaths of two children, from Pennsylvania and Illinois respectively, were caused by raccoon roundworm induced visceral larva migrans (VLM) and central nervous system (CNS) disease (Kazacos et al, 1984).

The potential health problems associated with raccoon roundworms prompted the Department of Lands and Forests to investigate the occurrence of this parasite in Nova Scotia.

METHODS

During the period of November 1/86 until February 28/87, two hundred and nineteen (219) raccoon carcasses were submitted by trappers, hunters and fur buyers. Each specimen was labelled with an identification number, county of origin and date received. Carcasses were frozen for convenient storage and thawed as time permitted for individual processing.

After thawing, the entire gastro-intestinal tract was removed and examined for the presence of roundworms. All specimens were collected and stored in a 10 per cent neutral buffered formalin solution. Identification of the nematodes was done at the Atlantic Veterinary College, Charlottetown, P.E.I.

RESULTS

Table 1 provides a breakdown of the incidence of raccoon roundworms found during this investigation:

Table 1. *Occurrence of raccoon roundworms (B. procyonis) in Nova Scotia.*

Counties	Number of Raccoons	Number with *B. procyonis*	% Occurrence
Digby Yarmouth Shelburne	28	5	17.9
Lunenburg Queens	23	0	0
Annapolis Kings	56	12	21.4
Hants Halifax	50	1	2.0
Colchester Cumberland	26	0	0
Pictou Antigonish Guysborough	20	0	0
Victoria Inverness	12	0	0
Cape Breton Richmond	4	0	0
Provincial Total	219	18	8.2

Although the provincial rate of incidence was 8.2 per cent, it is interesting to note that no occurrence was recorded east of Hants County. Although a smaller sample size was collected from eastern counties, the fact that this investigation only found raccoon roundworms in the western half of the province, suggests that the parasite may be absent or at least uncommon in the eastern portion of

Nova Scotia. Only a further, more systematic approach would reveal a more precise indication of the prevalence of raccoon roundworm in Nova Scotia.

In comparison, western New York state had an overall rate of incidence of 67.8 per cent (Ermer and Fodge, 1983) and portions of Indiana reported 70 per cent of all raccoons infected (Kazacos, 1983).

DISCUSSION

The raccoon (*Procyon lotor*), being the definitive host, does not appear to be seriously affected by this parasite. Only during instances of heavy to extreme infestations are there detrimental effects (even death) of the host animal caused by intestinal obstruction or rupturing (Stone, 1983).

In an intermediate host, such as mice, squirrels, rabbits, certain birds and primates, including man, ingestion of the raccoon roundworm eggs can lead to health problems. The eggs hatch and the larvae will penetrate the walls of the intestines and migrate through the liver and lungs. From the lungs, they can migrate to other regions of the body, especially to the tissues of the head, neck and chest. In most tissues the larvae become encysted in small fibrous nodules and cause no further problem. Some may enter the brain or eyes where they can produce significant damage (Kazacos et al, 1984).

Because of the damage caused to the brain and spinal cord, the raccoon roundworm is most often recognized or diagnosed as Central Nervous System (CNS) disease. If the larvae enter the tissue of the eye, a disease such as "ocular larva migrans" can follow (Kazacos et al, 1984).

The eggs of raccoon roundworm are shed in the feces of infected raccoons, but must go through an incubation period of at least 30 days before becoming infective. Accidental ingestion of these infective eggs can lead to the problems described above. Like most ascarid nematode eggs, these are some of the most resistant parasite eggs known, remaining viable at least three to five years in the soil and surviving refrigeration for as long as 12 years.

To destroy the eggs, infected areas can be sterilized with heat by using a gasoline or propane torch burned off using straw or hay, or washed thoroughly with a strong lipid solvent such as a fifty/fifty mixture of Xylene and absolute alcohol, boiling lye water (one pound per 20 gallons or 0.454 kg/90 litres) or boiling Lysol$_{TM}$. Any clean-up should involve the use of disposable gloves and face masks to prevent self-infection.

Raccoons kept at home as pets, in wildlife parks or zoos should be periodically dewormed with medications (antihelmintics) that are available from veterinarians.

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